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DOCUMENT-IDENTIFIER: US 6538242 B1

TITLE: Method of measuring spectral
responsivity characteristic
of image pick-up device and
method of configuring imaging
data

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INVENTOR-INFORMATION:

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ABSTRACT:

A spectroscope (2) spectrally separates a light from a light source (3) and outputs the separated light from an emitting terminal (6) thereof. An image

pick-up device (1) having a solid-state image sensor picks-up an image of the emitting terminal (6). First operation means (7) performs a correction to each of plural image signals corresponding to plural pixels that are outputted by the image pick-up device (1) so that a gradation characteristic of the image pick-up device (1) is corrected from non-linearity to one closer to linearity. Second operation means (8) calculates, as a spectral responsivity characteristic for the separated light, a mean value of the plural image signals after the correction by averaging the same over a certain range within the plural pixels. As a result, the spectral responsivity characteristic of the image pick-up device (1) is measured precisely.

8 Claims, 22 Drawing figures

Exemplary Claim Number: 1

Number of Drawing Sheets: 14

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Brief Summary Text - BSTX (6):

FIG. 20 is a diagram showing application of the above-mentioned image pick-up device and method, illustrating a structure of a device for measuring a color reproducibility and gradation characteristic of a digital still camera used as an example of an image pick-up device. FIG. 20 shows an image pick-up device 1 and a test chart 20 which is a subject of the image pick-up device 1.

FIG. 20 also shows an illumination light source 21 having a stable color temperature and for illuminating the test chart 20, and an image output device 15 for receiving data output from the image pick-up device 1, for example, a computer or the like.

Detailed Description Text - DETX (56):

In the configuration shown in FIG. 16, the following is assumed. The image pick-up device 1 has an image pick-up characteristic adapted to a color space of the image output device 15. For example, the image pick up device 1 has an NTSC image pick-up characteristic if the image output device 15 is an NTSC monitor, and the image pick-up device 1 has an image pick-up characteristic adaptable to an sRGB space if the image output device 15 is based on the sRGB space. In the case where a color chart having a known spectral distribution characteristic $\rho(\lambda)$ is previously provided on a test chart 20 and an illumination light source 21 has a standard white color defined by the color space, signals of the color chart obtained from the image pick-up device 1 are represented by Rs, Gs and Bs.